

**ADDRESSES:** Comments and materials concerning this proposal should be sent to the Field Supervisor, Asheville Field Office, U.S. Fish and Wildlife Service, 100 Otis Street, room 224, Asheville, North Carolina 28801. Comments and materials received will be available for public inspection by appointment during normal business hours at the above address.

**FOR FURTHER INFORMATION CONTACT:** Ms. Nora Murdock at the above address (telephone 704/259-0321; FTS 672-0321).

**SUPPLEMENTARY INFORMATION:**

**Background**

*Sisyrinchium dichotomum*, described by Eugene P. Bicknell (1899) from material collected in North Carolina, is a perennial herb. The dichotomously branching stems grow approximately 11 to 20 centimeters tall. The basal leaves, usually pale to bluish green, are from one-third to one-half the height of the plant. The tiny (7.5 millimeters long) white flowers appear from late May through July in clusters of four to six at the ends of winged stems. The fruit of this species is a round, pale to medium brown capsule containing three to six round or elliptical black seeds (Bicknell 1899, Hornberger 1987).

*Sisyrinchium dichotomum* is endemic to the upper piedmont of North Carolina, where it is currently known from three locations in Polk, Henderson, and Rutherford Counties. The species occurs on rich, basic soils probably weathered from amphibolite. It grows in clearings and the edges of upland woods where the canopy is thin and often where down-slope runoff has removed much of the deep litter layer ordinarily present on these sites.

White irisette is dependent upon some form of disturbance to maintain the open quality of its habitat. Currently, artificial disturbances, such as power line and road right-of-way maintenance [where they are accomplished without herbicides and at a season that does not interfere with the reproductive cycle of this species], are maintaining some of the openings that may have been provided historically by native grazing animals and naturally occurring periodic fires.

*Sisyrinchium dichotomum* has always been known as a narrow endemic, limited to an area in North Carolina bounded by White Oak Mountain, Sugarloaf Mountain, and Chimney Rock. Two of the remaining populations are within highway rights-of-way—one maintained by the North Carolina Department of Transportation, and one inside a commercial recreation area where roads are privately maintained.

The third population is within an area recently subdivided for residential development; most of the plants in this latter population are also along private road rights-of-way, with some also being underneath power lines. Colonies within these populations have been observed to be adversely impacted by road maintenance operations, erosion of steep roadbanks, natural succession due to suppression of disturbance, bulldozing as part of residential/ industrial development, complete removal of the tree canopy (this species appears to prefer thin shade rather than complete sun), and trampling by tourists and sightseers. The continued existence of *Sisyrinchium dichotomum* is threatened by these activities, as well as by herbicide use, highway expansion and improvements, and by encroachment of exotic species. Kudzu (*Pueraria lobata*), Japanese honeysuckle (*Lonicera japonica*), and *Microstegium vimineum* are aggressive exotic weeds which threaten populations at all three sites.

Federal government actions on this species began with the publication of the February 21, 1990, revised Notice of Review for Native Plants in the Federal Register (55 FR 6184), in which this species appeared as a category 2 candidate for listing. Category 2 comprises taxa for which information now in possession of the Service indicates that proposing to list as endangered or threatened is possibly appropriate, but for which conclusive data on biological vulnerability and threats are not currently available to support proposed rules. Additional surveys recently have been conducted by Service and State personnel, and the Service now believes sufficient information exists to proceed with the proposal to list *Sisyrinchium dichotomum* as endangered.

**Summary of Factors Affecting the Species**

Section 4(a)(1) of the Endangered Species Act (16 U.S.C. 1531 *et seq.*) and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act set forth the procedures for adding species to the Federal lists. A species may be determined to be endangered or threatened due to one or more of the five factors described in section 4(a)(1). These factors and their application to *Sisyrinchium dichotomum* Bicknell are as follows:

A. *The present or threatened destruction, modification, or curtailment of its habitat or range.* *Sisyrinchium dichotomum* has been and continues to

**DEPARTMENT OF THE INTERIOR**

**Fish and Wildlife Service**

**50 CFR Part 17**

**RIN 1018-AB52**

**Endangered and Threatened Wildlife and Plants; Proposed Endangered Status for the Plant *Sisyrinchium dichotomum* (White Irisette)**

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Proposed rule.

**SUMMARY:** The Service proposes to list *Sisyrinchium dichotomum* (white irisette), a perennial herb limited to three populations in North Carolina, as an endangered species under the authority of the Endangered Species Act (Act) of 1973, as amended. *Sisyrinchium dichotomum* is endangered by suppression of natural disturbance, conversion of habitat for industrial/ residential development, encroachment by exotic species, and highway construction and improvements. This proposal, if made final, would implement Federal protection provided by the Act for *Sisyrinchium dichotomum*. The Service seeks data and comments from the public on this proposal.

**DATES:** Comments from all interested parties must be received by February 19, 1991. Public hearing requests must be received by February 4, 1991.

be endangered by destruction or adverse alteration of its habitat. The species is a narrow endemic, known from only three populations, each of which has been partially impacted by residential development, road maintenance activities, and trampling by tourists and sightseers. Suppression of natural disturbance appears to be a problem for this species and will be discussed in detail under Factor E below. Most of the colonies in the three remaining populations are on roadsides. One site recently has been subdivided for residential development; another is a commercial recreation area visited by hundreds of thousands of tourists annually. The Chimney Rock population currently has less than 100 individuals remaining; approximately 200 plants remain at the Sugarloaf Mountain location. The White Oak Mountain population is the largest surviving population, with approximately 1,000 plants. These populations have apparently undergone considerable decline over the past 50 years, since Walker (North Carolina Natural Heritage Program 1990) described the species as "fairly common" here in 1942. Because of the proximity of this species' populations to existing roads, it is extremely vulnerable to accidental destruction from road maintenance and improvement activities.

**B. Overutilization for commercial, recreational, scientific, or educational purposes.** *Sisyrinchium dichotomum* is not currently a significant component of the commercial trade in native plants; however, with its attractive growth habit and unusual white flowers, the species has potential for horticultural use, and publicity could generate an increased demand. Because of the species' small and easily accessible populations, it is vulnerable to taking and vandalism that could result from increased specific publicity.

**C. Disease or predation.** Not applicable to this species at this time.

**D. The inadequacy of existing regulatory mechanisms.** *Sisyrinchium dichotomum* is afforded legal protection in North Carolina by North Carolina General Statutes, sections 106-202.122, 106-202.19 (Cum. Sup. 1985), which provide for protection from interstate trade (without a permit) and for monitoring and management of State-listed species; taking of plants without written permission of landowners is also prohibited. State prohibitions against taking are difficult to enforce and do not cover adverse alterations of habitat, such as exclusion of fire and other forms of natural disturbance. Although one site is registered with the North Carolina

Natural Heritage Program as a State Natural Area, this designation is voluntary and not legally binding. The Endangered Species Act would provide additional protection and encouragement of active management for *Sisyrinchium dichotomum*.

**E. Other natural or manmade factors affecting its continued existence.** As mentioned in Factor A, many of the remaining populations are small in numbers of individuals stems and in area covered by the plants. Of the three remaining populations, two have a combined total of less than 300 plants. Therefore, there may be low genetic variability within populations, making it more important to maintain as much habitat and as many of the remaining colonies as possible. Another threat to this species is the encroachment of aggressive exotics such as kudzu, Japanese honeysuckle, and *Microstegium vimineum*. All three populations are threatened by the invasion of these aggressive weeds.

Much remains unknown about the demographics and reproductive requirements of this species. Fire, or some other suitable form of disturbance, seems to be essential for maintaining the open habitat preferred by *Sisyrinchium dichotomum*. Without such periodic disturbance, the canopy over these habitats becomes too thick, shading out the *Sisyrinchium* and its shade-intolerant associates. Removal of the litter layer by fire, flooding, or other means also seems to be essential to germination and survival of seedlings of this species. The current distribution of this species is ample evidence of its dependence on disturbance, with all three remaining populations' being located in close proximity to roads, utility line rights-of-way, or trails.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by this species in determining to propose this rule. Based on this evaluation, the preferred action is to list *Sisyrinchium dichotomum* as endangered. With only three small populations remaining, all located in areas where they are vulnerable to extirpation from road maintenance/improvement activities or residential development, and, based upon its dependence on some form of active management, the species warrants protection under the Act. Endangered species seems appropriate because of imminent serious threats facing all three populations. According to Hornberger (1987), *Sisyrinchium dichotomum* has the most restricted range of all species of the genus found

within the Southeastern United States, with only 11 collections having been made from 1902 through 1985. Critical habitat is not being designated for the reasons discussed below.

#### Critical Habitat

Section 4(a)(3) of the Act, as amended, requires that, to the maximum extent prudent and determinable, the Secretary propose critical habitat at the time the species is proposed to be endangered or threatened. The Service finds that designation of critical habitat is not prudent for *Sisyrinchium dichotomum* at this time. As discussed under Factor B in the "Summary of Factors Affecting the Species" section, *Sisyrinchium dichotomum* is vulnerable to taking, an activity difficult to enforce against and only regulated by the Act with respect to endangered plants in cases of (1) Removal and reduction to possession from lands under Federal jurisdiction, or their malicious damage or destruction on such lands; and (2) removal, cutting, digging up, damaging, or destroying these plants in knowing violation of any State law or regulation, including State criminal trespass law. Such provisions are difficult to enforce, and publication of critical habitat descriptions would make *Sisyrinchium dichotomum* more vulnerable, increasing enforcement problems for the State of North Carolina. All populations are located on private lands and therefore would be susceptible to collection and vandalism. The species could be adversely affected by increased visits to, and associated trampling of, occupied sites as a result of critical habitat designation. The Federal and State agencies and landowners involved in protecting and managing the habitat of this species have been informed of the plant's locations and the importance of its protection.

#### Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Endangered Species Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. Such actions are initiated by the Service following listing. The protection required of Federal agencies at the

prohibitions against collection are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to any critical habitat. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) requires Federal agencies to confer informally with the Service on any action that is likely to jeopardize the continued existence of a proposed species or result in the destruction or adverse modification of proposed critical habitat. If a species is subsequently listed, section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service.

Federal activities that could impact *Sisyrinchium dichotomum* and its habitat in the future include, but are not limited to, the following: Power line construction and certain types of maintenance/improvements, highway construction and certain types of maintenance/improvements, and permits for mineral exploration and mining. The Service will work with the involved agencies to secure protection and proper management of *Sisyrinchium dichotomum* while accommodating agency activities to the extent possible.

The Act and its implementing regulations found at 50 CFR 17.61, 17.62, and 17.63 set forth a series of general prohibitions and exceptions that apply to all endangered plants. With respect to *Sisyrinchium dichotomum*, all trade prohibitions of section 9(a)(2) of the Act, implemented by 50 CFR 17.61 would apply. These prohibitions, in part, would make it illegal for any person subject to the jurisdiction of the United States to import or export the species, transport it in interstate or foreign commerce in the course of a commercial activity, sell or offer it for sale in interstate or foreign commerce, or remove and reduce the species to possession from areas under Federal jurisdiction. In addition, for endangered plants, the 1988 amendments (Pub. L. 100-478) to the Act prohibit the malicious damage or destruction of such plants on Federal

lands and their removal, cutting, digging up, damaging, or destroying in knowing violation of any State law or regulation, including State criminal trespass law. Certain exceptions can apply to agents of the Service and State conservation agencies. The Act and 50 CFR 17.62 and 17.63 also provide for the issuance of permits to carry out otherwise prohibited activities involving endangered species under certain circumstances.

It is expected that few trade permits would ever be sought or issued, since *Sisyrinchium dichotomum* is not common in cultivation or in the wild. Requests for copies of the regulations on listed plants and inquiries regarding prohibitions and permits may be addressed to the Office of Management Authority, U.S. Fish and Wildlife Service, 4401 N. Fairfax Drive, Room 432, Arlington, Virginia 22203 (703/358-2104).

#### Public Comments Solicited

The Service intends that any final action resulting from this proposal will be as accurate and as effective as possible. Therefore, comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning this proposed rule are hereby solicited. Comments particularly are sought concerning:

- (1) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to this species;
- (2) The location of any additional populations of this species and the reasons why any habitat should or should not be determined to be critical habitat as provided by section 4 of the Act;
- (3) Additional information concerning the range, distribution, and population size of this species; and
- (4) Current or planned activities in the subject area and their possible impacts on this species.

Final promulgation of the regulation on this species will take into consideration the comments and any additional information received by the Service, and such communications may lead to a final regulation that differs from this proposal.

The Endangered Species Act provides for a public hearing on this proposal, if requested. Requests must be received within 45 days of the date of publication of the proposal. Such requests must be made in writing and addressed to the

Field Supervisor, Asheville Field Office (see "ADDRESSES" section).

#### National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the *Federal Register* on October 25, 1983 (48 FR 49244).

#### References Cited

- Bicknell, E. 1899. Studies in *Sisyrinchium*—VI: additional new species from the Southern States. *Bulletin of the Torrey Botanical Club*, 26:605-616.
- Hornberger, K. 1987. Systematics of the genus *Sisyrinchium* (Iridaceae) in the Southeastern United States. Unpublished Ph.D. dissertation, University of Arkansas. 328 pp.
- North Carolina Natural Heritage Program. 1990. Element occurrence records for *Sisyrinchium dichotomum*. Raleigh, NC. 66 pp.

#### Author

The primary author of this proposed rule is Ms. Nora Murdock, Asheville Field Office, U.S. Fish and Wildlife Service, 100 Otis Street, room 224, Asheville, North Carolina 28801 (704/259-0321; FTS 672-0321).

#### List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

#### Proposed Regulation Promulgation

Accordingly, it is hereby proposed to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

#### PART 17—[AMENDED]

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361-1407; 16 U.S.C. 1531-1544; 16 U.S.C. 4201-4245; Pub. L. 99-625, 100 Stat. 3500; unless otherwise noted.

2. It is proposed to amend § 17.12(h) by adding the following, in alphabetical order under Iridaceae to the List of Endangered and Threatened Plants:

#### § 17.12 Endangered and threatened plants.

(h)

Species		Historic range	Status	When listed	Critical habitat	Special rules
Scientific name	Common name					
Indaceae—Iris family:						
<i>Sisymchium dichotomum</i>	White insette	U.S.A. (NC)	E		NA	NA

Dated: November 9, 1990.

**Bruce Blanchard,**

*Acting Director, Fish and Wildlife Service.*

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